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CHARLES ELMORE CROPLEY

IN THE

Supreme Court of the United States

OCTOBER TERM, A. D. 1939.

STATE OF WISCONSIN, MINNESOTA, OHIO and PENNSYLVANIA, Complainants, v. STATE OF ILLINOIS and the SANITARY DISTRICT OF CHICAGO, Defendants.	No. 2 Original.
STATE OF MISSOURI, KENTUCKY, TENNESSEE, LOUISIANA, MISSISSIPPI and ARKANSAS, Intervening Defendants, STATE OF MICHIGAN, Complainant, v. STATE OF ILLINOIS and the SANITARY DISTRICT OF CHICAGO, et al., Defendants.	No. 3 Original.
STATE OF NEW YORK, Complainant, v. STATE OF ILLINOIS and the SANITARY DISTRICT OF CHICAGO, et al., Defendants.	No. 4 Original.

REPLY BRIEF AND ARGUMENT OF THE STATE OF ILLINOIS TO THE BRIEF OF WISCONSIN, MINNESOTA, OHIO, PENNSYLVANIA, MICHIGAN AND NEW YORK IN SUPPORT OF THEIR RETURN TO RULE TO SHOW CAUSE ISSUED ON APPLICATION OF THE STATE OF ILLINOIS AS PETITIONER, FOR A TEMPORARY MODIFICATION OF PARAGRAPH 3 OF THE DECREE OF APRIL 21, 1930.

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I.

THIS COURT HAS JURISDICTION TO ALLOW THE PETITION OF THE STATE OF ILLINOIS FOR MODIFICATION OF THE DECREE OF APRIL 21, 1930.

Contrary to the position assumed by the respondent lake states, it is obvious from a review of the Special Master's report and the decree entered by the court with the subsequent amendment, that this court did not intend to relinquish jurisdiction over the matter of diversion on December 31, 1938, the date when the annual average diversion of 1500 c.f.s. was to become effective. Respondents recognize of course that the Sanitary District has complied with the provision of the decree as to the restricted annual diversion.

In the Report of the Special Master on re-reference, Honorable (now Chief Justice) Charles Evans Hughes, on pages 138 and 139, stated:

> "* * * Provision should be made for further examination, after the sewage treatment plants have been completed, and the effect of the effluent therefrom with the storm water flow on the navigable channels has been observed, to the end that the question of any further or other relief may have appropriate consideration *in the light of actual conditions.*"

In this connection, we call the Court's attention to the fact that the decree contemplated that the last work was to be completed on or before December 31, 1938, and on page 145 of said Master's Report appears the following recommendation:

> "It is recommended that the Court should retain jurisdiction as there are questions which it is impossible to dispose of at this time in full justice to the

parties; as, for example, with respect to the extent to which the diversion of water from Lake Michigan by the Sanitary District may be reduced below 5,000 c.f.s., in addition to pumpage, after the installation of controlling works in the Chicago River and pending the completion of the sewage treatment works, and also with respect to any further or other provisions as to the diversion which may be found to be appropriate *after the sewage treatment works have been completed and the results of their operation with respect to the effluent and the condition of the navigable waters have been observed.* As construction work will be conducted on a large scale for several years, *and unforeseen contingencies may arise,* it would also seem to be important that there should be opportunity for the parties to come before the Court at any time to obtain such further directions as the facts may warrant."

In the proposed form of the decree submitted by Special Master Hughes, in Item 13, he recommends that either party, complainants or defendants, may apply for relief with respect to the time allowed for construction or the progress of construction or the method of operation or in respect to the diversion of water from Lake Michigan, as may be deemed to be appropriate.

Paragraph 14 of the proposed decree provides that any of the parties, complainants or defendants, may irrespective of the filing of the reports, apply at any time for an order or direction or modification of the decree.

The decree entered April 21, 1930, followed the recommendations of the Master in retaining jurisdiction to entertain at any time petitions in relation to the subject matter by either the complainants or the defendants as stated in Paragraphs 6 and 7 thereof.

Furthermore, when the Court entered its amended decree of May 22, 1933, it used the language "that the decree of April 21, 1930 be and the same is hereby en-

larged by the addition of * * *, etc. It in no way indicated any intention to relinquish jurisdiction to entertain petitions from either the complainants or the defendants for any other or further action or relief.

We respectfully submit that the Court did retain jurisdiction of the subject matter and now may enter such modification of said decree as it in equity may deem fit and proper, and therefore, the Petition of the State of Illinois was filed in apt time.

II.

THE SANITARY DISTRICT OF CHICAGO HAS BEEN DILIGENT IN CARRYING ON THE CONSTRUCTION PROGRAM CONTEMPLATED BY THE DECREE ENTERED IN THIS CASE AND NEITHER THE STATE OF ILLINOIS NOR THE SANITARY DISTRICT HAS BEEN NEGLIGENT IN FULFILLING ITS OBLIGATIONS WITH RESPECT THERETO.

There has been no comparable sewage treatment construction program carried on either in the United States or in the entire world that in any way equals the huge scale sewage construction work carried on by the Sanitary District since the amended decree of May 22, 1933.

The respondents, in their return to the rule to show cause entered in this case, charge, generally, that the petitioner and the Sanitary District of Chicago "were never reasonably diligent in prosecuting the construction program involved in providing complete treatment for all the sewage of The Sanitary District." It is set forth in the petition, however, and not denied in the return filed by respondents, that the construction program contem-

plated by the decree is practically completed and in operation, except for the secondary or complete treatment of the West Side sewage; that the West Side Treatment Works is now giving only partial treatment and that the failure to complete said works is primarily responsible for the obnoxious, noisome and unhealthy conditions now existing in the Sanitary District channel and the Illinois Waterway; that the failure to complete said West Side Treatment Works is not due to negligence on the part of the petitioner or the Sanitary District of Chicago; that the Sanitary District did not proceed with the construction for the complete treatment of the West Side sewage because of a recommendation submitted by a commission appointed by the Federal Emergency Administration of Public Works that it proceed with the construction of works to provide complete treatment for the South-West Side area instead of the original plan to supplement the existing West Side Treatment Works for complete treatment, in order to permit time for further investigation and large scale tests as to the best methods of supplementing the existing West Side Imhoff Tank Plant (Report of the Board of Engineers appointed by the Honorable Harold L. Ickes, Administrator, Federal Administration of Public Works, to review the plans and specifications prepared by The Sanitary District of Chicago for certain sewage treatment work at the West South-West site April 30, 1934, pages 15, 27, 34, 44-45); and that said modification of the order of construction procedure adopted pursuant to the recommendation submitted by said P.W.A. Commission was reported to this Honorable Court by the Sanitary District on May 23, 1934, due notice thereof having been given to the respondents. No objections were filed at that time or since by the respondents to the revised order of construction procedure.

Following this modification of construction procedure, The Sanitary District proceeded with the construction of the sewers and treatment plants as suggested and recommended by the Public Works Administration. While delay in the prosecution of this construction program was caused from time to time by strikes, by the necessity of re-advertising certain contracts, by bad weather and other conditions, it must be remembered that the construction work performed pursuant to these plans involved, since 1934, an expenditure of over *sixty million dollars* and was carried on under *more than one hundred separate contracts.* We respectfully submit that the resulting delay was not excessive in view of the large amount of work involved in this program.

With respect to the investigation and large scale tests which the Public Works Administration recommended should be made before the plans for the West Side Treatment Works were adopted, we respectfully submit that the Sanitary District was conducting and continued to conduct certain experiments at the West Side Works and that experimental work continued there and also at the North Side Works. A contract for the testing plant was advertised in March, 1937, and this plant was put in operation in September, 1937. Experiments were conducted at this plant until April, 1939. Reports were made monthly to the Review Board of Public Works Administration regarding this experimental work. The final formal report on this work is now being prepared and should be ready within the next two or three weeks. When this report is submitted and approved by the Public Works Administration, The Sanitary District of Chicago will proceed with the preparation of detailed plans and specifications for the complete supplementary sewage treatment plant at the West Side Treatment Works.

It is contemplated that funds will be available for construction work as such construction work progresses when these plans and specifications are completed and approved and it is estimated that the time required for the physical construction of said works for complete treatment at the West Side Sewage Treatment Works will be two working seasons, which will require the diversion of the additional water from Lake Michigan requested in the petition until December 31, 1942, to relieve the obnoxious, noisome and unhealthy conditions now existing in the Sanitary District channel and the Illinois waterway, pending the completion of the West Side Treatment Works.

III.

THE SEWAGE TREATMENT WORKS OF THE SANITARY DISTRICT OF CHICAGO NOW IN OPERATION ARE BEING OPERATED IN A HIGHLY EFFICIENT MANNER.

The respondents in their brief criticize without justification, the operation by The Sanitary District of Chicago of its present facilities for the treatment of sewage. In answer to their criticism we respectfully submit the following:

North Side Sewage Treatment Works.

Contrary to the statement made in respondents' brief on page 24, sludge from the North Side Sewage Treatment Works in the past has been digested in the Imhoff Tanks of the West Side Treatment Works and is now being dried in the incinerating plant at the South-west Side Treatment Works as previously reported to this Honorable Court. The operating results show that the

sewage treated in the North Side Treatment Works during the past three years was purified to the extent of 91.5% in 1937, 92¼% in 1938, and approximately 93% in 1939, although credit in the reports to this court has only been assumed by The Sanitary District of Chicago for 85% purification. We also call attention to the fact that air was used at the North Side Treatment Works to the extent needed to produce a suitable effluent. This is evidenced by the fact that in 1937 the 5-day B.O.D. reduction was 91.5% and suspended solids reduction 91.5%; in 1938 the B.O.D. reduction was 92.2% and the suspended solids reduction was 93%; in 1939 the B.O.D. reduction was 93.5% and the suspended solids reduction was 92.4%. In parts per million the effluents contained:

Year	*5-day B.O.D.*	*Suspended Solids*
1937	9.2	12
1938	8.6	10
1939	7.7	11

All of these results demonstrate efficient and well controlled operations.

For the purpose of supporting the purported inefficiency in operation of the North Side plant the respondents compare the operation with a similar plant at Milwaukee, Wisconsin. The following table shows the sewage treatment in 1939 at the North Side Sewage Treatment Works compared with treatment at the Milwaukee plant:

SEWAGE TREATMENT, 1939.

	North Side	*Milwaukee*
Average Flow (mil. gal. per 24 hrs.)	202.5	121.2
5-Day B.O.D.		
Raw Sewage (p.p.m.)	117.0	179.7
Effluent (p.p.m.)	7.7	8.5
Reduction (per cent)	93.5	95.0
Suspended Solids		
Raw Sewage (p.p.m.)	114	268
Effluent (p.p.m.)	11	16.5
Reduction (per cent)	92.4	93.8

The effluent from the North Side Treatment Works of The Sanitary District of Chicago as shown on the basis of the average analyses for 1939 is commonly recognized as better than that from the Milwaukee plant. The Milwaukee effluent (discharged into Lake Michigan) contained 50% more suspended solids and had a higher B.O.D. than the effluent from the North Side Sewage Treatment Works of The Sanitary District of Chicago.

The table, page 50 of respondents' Brief, showing 97.5 per cent removal of 20 degree Bacteria at Milwaukee, is of no particular significance for Chicago conditions. This is a test made where treatment plant effluent is discharged into drinking water sources. It means the removal of Bacteria as shown by tests media incubated at a temperature of 20 degrees Centigrade or 68 degrees Fahrenheit, and of course includes intestinal organisms. Tests may also be made with media incubated at body temperature, or 98.4 degrees Fahrenheit. Such tests are interesting and have been made occasionally by The Sanitary District, but since none of the sewage, either raw or treated, is discharged into a drinking water supply in the Sanitary District, or in the Illinois River Valley, such determinations are not made by the Sanitary District as a routine matter. The universal measure of the efficiency of sewage treatment is the percentage of removal of suspended solids and the percentage of the reduction of the biochemical oxygen demand, usually based on the 5-day period of incubation and designated 5-day B.O.D.

The West Side Treatment Works.

Contrary to the statement made in respondents' brief on page 26, no sludge from the Imhoff Tanks of the West Side Treatment Works has ever been discharged into the Main Channel. As a matter of fact, there is no way

in which such sludge could be discharged into the channel. The sludge has been placed on sand drying beds and after drying has been removed for deposit west of Harlem Avenue and north of the main channel on the property of the Sanitary District. A portion of the sewage from the West Side project is now being treated at the South-west Side Treatment Works, but the extent to which the South-west Side Treatment Works can be used for West Side sewage can be determined only by actual trial. Information on the exact amount of sewage which can be so treated should be available within the next two or three months. However it is expected that this amount will be about 100,000,000 gallons daily.

With respect to respondents' suggestion, on pages 43 and 44 of their brief, that the amount of sewage from the West Side area, which is treated in the South-west Side Treatment Works, should be increased so as to provide complete treatment of a larger amount at the South-west Side Treatment Works, the Sanitary District has not been ignorant of such a possibility and in addition to so treating that portion of the sewage of the West Side area now handled at the South-west Sewage Treatment Works it contemplates an increase within the limits of the capacity of such works and in that connection the petitioner submits the following:

The South-west Side Treatment Works has an average designed capacity of 400,000,000 gallons daily and can be operated to treat 600,000,000 gallons daily (which is 150% of dry flow) during the relatively brief periods of storm flow. It could not, without certain major additions in tanks and equipment, be operated continuously at 600,000,000 gallons daily rate.

The West Side Treatment Works (Imhoff Tanks) has a flow capacity per day of 467,000,000 gallons as an average and 700,000,000 gallons for a storm maximum.

If operated as designed, the combined South-west and West Side Treatment Works would give complete treatment to the 400,000,000 gallons daily average with overload to 600,000,000 gallons daily storm maximum South-west Side sewage, but only partial treatment to the 467,-000,000 gallons daily average with overload to 700,000,000 gallons daily storm maximum West Side sewage.

It is expected that 500,000,000 gallons daily average may be completely treated continuously at the South-west plant, leaving only 367,000,000 gallons daily average for partial treatment at the West Side plant. The treatment of the storm maximum of sewage however would be the same in either case.

This procedure will not attain the ultimate treatment expected of 90% or better on dry flow and 85% annual average. It will be nearer to 77% treatment of dry flow and 71% annual average. It is not expected that the aforesaid ultimate treatment can be attained until complete treatment facilities have been provided for the West Side sewage.

Operating Efficiency of the Several Sewage Treatment Plants.

The North Side Plant, the Calumet Plant and the South-west Side Plant as now operated produce a purification of 90% or more. The actual purification during 1939 was in per cent removal:

Plant	*5-day B.O.D.*	*Suspended Solids*
North Side	93.5	92.4
Calumet	87.0	90.6
West Side	53.7	63.0
Southwest (6 mos., July-Dec.)	85.8	88.5

During the period of "tuning up" at the South-west Sewage Treatment Works the efficiencies have not been as high as at the North Side works, but when the South-west plant operates on a permanent schedule, the percentage purification should be as high as at the North Side Works.

Respondents' criticism of the use of the term "population equivalent" (p. 28 of their brief) is not justified. The use of this term is made necessary in the case of the City of Chicago because of the large amount of packing house and stockyards waste. This waste is equivalent to the waste of approximately 1,200,000 people.

No other municipality in the world has so large a total of packing house and stockyards or any other trade waste. All such wastes in Chicago must be treated at the South-west Plant, and not distributed to all of the treatment works of the Sanitary District.

The suggestion regarding the metering of water in Chicago is not new. The Sanitary District has advocated water-metering for many years past and this matter is being handled by the City of Chicago and reasonable progress has been made and is being made. The average daily pumpage for the Chicago waterworks was reported in gallons per capita as 255 in 1937 and 241 in 1938.

Respondents' contention that the Sanitary District of Chicago is now able to obtain the ultimate treatment necessary by the addition of supplementary chemical treatment to all or part of the West Side flow which respondents contend would substantially double the efficiency of the Imhoff Tanks in the removal of the oxygen demand in the sewage at the West Side Treatment Works, is not supported by actual large scale tests or accepted by recognized sanitary engineers. Actually for the nine year period, from 1931 to 1939, the West Side Works averaged

48.2 per cent removal of 5-day B.O.D. with a maximum year of 56 per cent. Obviously this efficiency cannot be doubled. On this subject we call the Court's attention to the report of the Board of Review made April 30, 1934, to the Honorable Harold L. Ickes, Administrator, Federal Emergency Administration of Public Works, wherein on page 45 said board states that although it has given considerable time and attention to the various chemical processes of sewage disposal, the high cost of chemicals in some cases and the relative inferior quality of the resulting effluent, precludes this process from consideration as a primary method of disposal under conditions in Chicago, although its consideration as a supplementary method, either for the treatment of the Imhoff Tank effluent or for final treatment of the effluent of other processes, merits further consideration. On page 47 the Board suggested that large scale tests be made to determine whether any combination of Imhoff Tank treatment and chemical treatment, with or without filtration, will so improve the quality of effluent as to make further treatment unnecessary. These tests have been made and the results show that the efficiency of the Imhoff Tanks is not doubled, as claimed by respondents, but only increased about one-third or at most one-half.

In passing, it may be said that one of the consultants of the Board of Review, John H. Gregory, Consulting Engineer of Baltimore, Maryland, and Professor of Sanitary Engineering at Johns Hopkins University, reported to the Board that chemical precipitation, either as a primary means of treatment or as a means of supplementing the existing Imhoff Tank installation at the West Side, did not merit serious consideration.

From the various large scale tests that have been made by The Sanitary District, it appears that the activated

sludge process is probably the proper method of supplementing the existing Imhoff Tanks in the treatment of West Side sewage, and the determination as to whether or not the activated sludge process or a combination of tank treatment and chemical treatment should be adopted is dependent upon the approval by the Board of Review of the Public Works Administration.

The efficiency attained by the Sanitary District in the operation of its sewage treatment works compares favorably with that of the treatment works of any other municipality. The criticism of respondents is unjustified and is not supported by facts.

IV.

THE TREND OF THE WATER LEVELS IN THE GREAT LAKES WILL BE UPWARD FOR THE YEARS 1940, 1941 AND 1942.

The water levels in the Great Lakes are now in the rising period of one of the fluctuating cycles. From a study of the lake level chart compiled by the U. S. Lake Survey it can be expected that the levels of the Great Lakes during the years 1940 to 1942, inclusive, will average a foot or more higher than they have averaged over the past eight years. This chart indicates that the average level of Lakes Michigan and Huron for the years from 1932 to 1939 was 578.33 feet above mean sea level; that this average for the year 1938 was 578.94, and for the year 1939 was 579.35. The history of the rise and fall of the lake levels, as shown by the U. S. Lake Survey, indicates that this rising trend will probably continue over the next three years, based on past experience and that these lake levels will not return to their 1932-

1939 average of 578.33 during that period of time. Furthermore it can be expected that the level of these lakes will rise to elevation 580 annual average before they again begin to recede.

The statement by respondents in their brief that the levels of the Great Lakes have been dropping rapidly since August, 1939, is misleading, when considering the trend of lake levels for the next three years. The fact that these levels have dropped between the summer of 1939 and January 31, 1940, cannot be taken as an indication that they will continue to drop. Despite the severe drought in the latter part of 1939, the drop in lake levels has not greatly exceeded the normal drop between summer and winter levels. The drop in levels, as stated by respondents in their brief, and the normal drop, is as follows:

	Fluctuation in Water Levels	
Lake	*Respondents*	*Normal*
Michigaa-Huron	15 inches	13.5 inches
Erie	21 inches	18 inches
Ontario	26 inches	21 inches

The high level on all the lakes in the summer of 1940 will be about 1 foot or more higher than the January level, referred to by respondents in their brief. This has been the case for the past eight years, and there will probably be no change in 1940, regardless of local drought.

The granting of a temporary increase in the diversion of water from Lake Michigan to 5000 cubic feet per second for the three year period from 1940 to 1942, inclusive, will work no hardship on riparian owners around the Great Lakes nor upon persons using the lakes for navigation. The temporary increase of 3500 c.f.s. (from 1500 c.f.s. to 5000 c.f.s.) will only lessen navigation depths (lower lake levels) two inches at the most. This amount

is no more than the change in levels which is likely to occur in any of the lakes in any month, due to natural causes.

V.

THE SECRETARY OF WAR HAS CERTAIN POWERS REGARDING THE AMOUNT OF THE DIVERSION OF WATER.

It has not been contended by the State of Illinois that the Secretary of War has power to authorize any diversions for the purpose of local sanitation. No diversion is being made for the purpose of sanitation, but for navigation in the Chicago river, as a part of the port of Chicago. The Secretary of War has certain authority under Section 10 of the Rivers and Harbors Act of 1899. The diversion now being made by the Sanitary District of Chicago is under the permit of June 26, 1930, from the Secretary of War acting in accordance with Section 10 of the Rivers and Harbors Act of 1899 and in conformity to the decree of this Court.

As stated in our petition, the Mayor of Joliet appealed to the Secretary of War for relief and the Secretary of War replied that he was of the opinion that he was without legal authority, in view of the decree of this Court to grant a temporary increase in diversion, and suggested that application be made to this Court. Acting under this suggestion, the State of Illinois has applied to this Court for a temporary increase, or for a pronouncement defining the authority of the Secretary of War. In so far as the power of the Secretary of War is concerned, it is not a matter of local sanitation; it is a question of proper conditions in a Federal waterway, over which the petitioner respectfully submits the Secretary of War has jurisdiction.

VI.

IT WAS NOT ONE OF THE OBJECTS OF THE STATE OF ILLINOIS IN FILING THE PETITION IN THIS CASE TO OBTAIN ADDITIONAL WATER FROM LAKE MICHIGAN FOR THE GENERATION OF HYDROELECTRIC POWER.

While the State of Illinois has filed an application with the Federal Power Commission for permits to construct power plants at the Brandon Pool Dam, at Marseilles and at Starved Rock, the plans for said power plants contemplate the diversion of water from Lake Michigan of only 1500 cubic feet per second in addition to domestic pumpage. Furthermore, the State of Illinois could not avail itself of any additional temporary diversion permitted by this Court in the operation of power plants, because (1) power plants cannot be constructed by the State of Illinois until further legislation is passed by the General Assembly of said State, and (2) the period required for constructing such power plants would extend beyond the period for which additional diversion is requested.

With respect to the power plant operated by the Sanitary District of Chicago, at Lockport, Illinois, said power plant was constructed and in operation before the reduction in water diversion to 1500 cubic feet per second under the decree of this Court, and while the Sanitary District could avail itself of the additional diversion requested in this petition, it has now adjusted its operation to the present limitations upon diversion imposed by the decree of this Court.

VII.

THE OBNOXIOUS, NOISOME AND UNHEALTHY CONDITIONS NOW EXISTING IN THE SANITARY DISTRICT CHANNEL AND THE ILLINOIS WATERWAY WERE MATERIALLY INCREASED UPON THE REDUCTION IN DIVERSION OF WATER FROM LAKE MICHIGAN FROM 5000 C.F.S. TO 1500 C.F.S. AND WILL CONTINUE UNTIL COMPLETE SEWAGE TREATMENT IS PROVIDED FOR THE WEST SIDE AREA UNLESS A TEMPORARY INCREASE IN DIVERSION IS PERMITTED.

In their brief respondents have sought to negative the present need for diversion of additional water by making a comparison of the dissolved oxygen in the DesPlaines and Illinois Rivers between the years 1921, 1922 and the year 1939. The conditions of 1921 and 1939 were in no way comparable. The total flow in the canal in 1921 was about 8500 c.f.s., made up of about 1200 c.f.s. domestic pumpage and 7300 c.f.s. of water diverted from Lake Michigan. No sewage treatment plants were in service prior to August 1, 1922, except in the small village of Morton Grove. The DesPlaines plant (Maywood) was started in operation August 2, 1922. The Calumet Sewage Treatment Plant was started in September, 1922. The Calumet Sag Channel was opened August 26, 1922.

Sanitary conditions in the Sanitary District Channels after the treatment plants were in operation and before the diversion was reduced to 1500 c.f.s. on January 1, 1939, were far better than they have been in 1939. In our petition, pages 8 to 15, inclusive, appear the various tests that have been made showing the extent of the pollution of the Sanitary District Channel and the Illinois Waterway, both prior to the reduction to 1500 c.f.s. and subse-

quent thereto, and the detrimental and dangerous condition to the health of the citizens along said channel and waterway and also to those in service of navigation.

On page 16 of our petition we set forth that the Secretary of War, recognized that conditions were unsightly, filthy and noisome and much worse than they were in 1938, and that unquestionably the waterways were contaminated by sewage from the Chicago area to a greater extent than contemplated, that remedial action was necessary, and furthermore that a temporary increase in diversion to 5000 cubic feet is necessary in the interest of public health and to remedy the unsightly and odorous conditions existing in Joliet.

With respect to respondents' criticism of the construction of the dam at Brandon Bridge, the petitioner states that the construction of this dam was necessary in the development of the Illinois Waterway and that although the Illinois Waterway project was begun by the State of Illinois, it was later turned over to and completed by the Federal Government and is now subject to the jurisdiction and control of the United States Government; that said dam was not constructed chiefly for the development of hydroelectric power but was necessary for the development of a nine foot channel for use as a waterway.

The cities of Lemont, Lockport and Joliet are not responsible for the condition complained of, as the pollution tests set forth in the petition show that at Summit, which is many miles above Lemont, there was no dissolved oxygen from April to September, 1939, except for 0.2 parts per million in June.

The United States census for 1930 shows the population of Lemont to be 2582, Lockport 3383, and Joliet 43000, making a total of 48,965. The total average of polluted and untreated sewage waters coming from The Sanitary

District of Chicago is of the equivalent of a population close to 2,000,000 persons, so that the pollution that could be charged to Lemont, Lockport and Joliet is negligible in its effect on river conditions.

The statement on page 30 of respondents' brief, that 1500 c.f.s. of diversion, plus domestic pumpage of 1700 c.f.s., would provide enough oxygen to balance the remaining biochemical oxygen demand of the effluents from the treatment plants is in error. The 1500 c.f.s. diversion is an annual average of which 500 c.f.s. will be storm run-off, leaving only 1000 c.f.s. diversion in times of dry weather. The 1700 c.f.s. is sewage or sewage treatment plant effluent. With all the oxygen that is present in the fresh water diverted, and in the sewage treatment plant effluent there will not be sufficient oxygen to supply the 5-day biochemical oxygen demand of the sewage treatment plant effluent. The 5-day B.O.D. is much less than the total B.O.D. In addition to the oxygen needed to balance the biochemical oxygen demands, an additional amount of about three parts per million is needed to guarantee against nuisance.

CONCLUSION.

In conclusion it is respectfully submitted that:

(1) The Court has jurisdiction to grant a temporary modification of the decree of April 1, 1930, as prayed in the petition.

(2) The Sanitary District has been diligent in carrying on the vast construction program contemplated by the decree and neither the State of Illinois nor the Sanitary District has been negligent in fulfilling its obligations with respect thereto.

(3) The sewage treatment works of the Sanitary District now in operation are being operated in a highly efficient manner and the sewage treated therein, except that treated in the West Side plant, is being purified to a point in excess of the purification of 85% considered as sufficient by this Court.

(4) The inability of the Sanitary District to complete the West Side Treatment Works within the time contemplated by the decree for the reasons set forth in the petition and this brief and the diminution of the diversion of water from Lake Michigan to 1500 c.f.s. under the terms of the decree has caused noisome and unhealthy conditions along the Sanitary District channel and the Illinois waterway to the injury of the people residing adjacent thereto of such a serious nature as to warrant relief and such conditions will continue until complete sewage treatment is provided for the West Side area unless a temporary increase in diversion is permitted as prayed in the petition.

(5) The time reasonably required for the construction of the complete West Side Treatment Works will be two working seasons after the plans and specifications are

approved and the contracts let with the result that this construction program cannot be completed until the fall of 1942; and

(6) The trend of water levels in the Great Lakes will be upward for the years 1940, 1941 and 1942 and the increased diversion will not injure the respondent states.

Wherefore the State of Illinois respectfully suggests that the decree in this case be modified temporarily to permit an annual average diversion of 5000 c.f.s. per second of water from Lake Michigan in addition to domestic pumpage until December 31, 1942, in order to alleviate said obnoxious, noisome and unhealthy conditions during the time required by the Sanitary District of Chicago for the completion of the West Side Treatment Works. (*Wisconsin* v. *Illinois*, 278 U. S. 367 pp. 418-9, 281 U. S. 179, p. 200, 289 U. S. 395, pp. 401-2; *Washington* v. *Oregon*, 297 U. S. 517 pp. 522-3.)

Respectfully submitted,

JOHN E. CASSIDY,
Attorney General of the
State of Illinois,
Attorney for Petitioner.

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SUPREME COURT OF THE UNITED STATES.

Nos. 2, 3 and 4, Original.—October Term, 1939.

State of Wisconsin, Minnesota, Ohio and Pennsylvania, Complainants,
vs.
State of Illinois and the Sanitary District of Chicago, Defendants.
} No. 2, Original.

State of Michigan, Complainant,
vs.
State of Illinois and the Sanitary District of Chicago, et al., Defendants.
} No. 3, Original.

State of New York, Complainant,
vs.
State of Illinois and the Sanitary District of Chicago, et al., Defendants.
} No. 4, Original.

[April 3, 1940.]

ORDER.

Upon consideration of the return of the States who are complainants in the above entitled causes to the rule issued January 29, 1940, requiring them to show cause why the petition of the State of Illinois for temporary modification of the decree of this Court entered April 21, 1930, and enlarged May 22, 1933, should not be granted, and of the argument had thereon,

It is ordered that the petition of the State of Illinois and the return of the complainant States to the order to show cause be referred to Monte M. Lemann, Esquire, as a Special Master, with directions and authority to make summary inquiry and to report to this Court with all convenient speed with respect to the actual condition of the Illinois Waterway by reason of the introduction of untreated sewage, and whether, and to what extent, if any, that condition constitutes an actual menace to the health of the inhabitants of the complaining communities, and also with respect to the feasibility of remedial or ameliorating measures available to the State of Illinois without an increase in the diversion of water from Lake Michigan.

The Special Master is authorized to employ stenographic and clerical help, to fix times and places for taking evidence, to issue subpoenas to witnesses, including those of his own selection, and to administer oaths. When the report of the Special Master is filed the clerk of the Court shall cause the same to be printed. The Special Master shall be allowed his actual expenses and a reasonable compensation for his services to be fixed hereafter by the Court. The allowances to him, the compensation paid to his stenographic and clerical assistants and the cost of printing his report shall be charged against and be borne by the parties in such proportions as the Court hereafter may direct.

If the appointment herein made of a Special Master is not accepted, or if the place becomes vacant during the recess of the Court, the Chief Justice shall have authority to make a new designation which shall have the same effect as if originally made by the Court herein.

A true copy.

Test:

Clerk, Supreme Court, U. S.

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SUPREME COURT OF THE UNITED STATES.

Nos. 2, 3 and 4, Original.—October Term, 1939.

State of Wisconsin, Minnesota, Ohio and Pennsylvania, Complainants,
vs.
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State of Illinois and the Sanitary District of Chicago, et al., Defendants. } No. 3, Original.

State of New York, Complainant,
vs.
State of Illinois and the Sanitary District of Chicago, et al., Defendants. } No. 4, Original.

[April 3, 1940.]

Per Curiam.

By the decree of April 21, 1930 (281 U. S. 179, 696), the State of Illinois and the Sanitary District of Chicago were enjoined from diverting on and after December 31, 1938, any of the waters of the Great Lakes-St. Lawrence system or watershed through the Chicago Drainage Canal or otherwise in excess of the annual average of 1500 cubic feet per second in addition to domestic pumpage. That date was fixed as affording adequate time, upon a liberal estimate, for the completion of the entire system designed for sewage treatment, together with controlling works to prevent reversals of the Chicago River in times of storm.

The State of Illinois now seeks a temporary modification of the decree so as to permit an increase of the diversion to not more than 5000 cubic feet per second, in addition to domestic pumpage, until December 31, 1942. The State submits its petition, not on behalf of the City of Chicago or the Sanitary District, but at the instance of certain communities bordering on the Illinois Waterway, including Lockport and Joliet. The grounds for the application are

that the system for sewage treatment has not yet been completed and will not be completed until the end of the year 1942, and that, in consequence, through the introduction of untreated sewage into the stream, an "obnoxious, noisome, filthy, unsanitary and dangerous condition to public health" exists along the Sanitary District Canal and the Illinois Waterway.

The State of Illinois has failed to show that it has provided all possible means at its command for the completion of the sewage treatment system as required by the decree as specifically enlarged in 1933 (289 U. S. 395, 710). No adequate excuse has been presented for the delay. Nor has the State submitted appropriate proof that the conditions complained of constitute a menace to the health of the inhabitants of the complaining communities or that the State is not able to provide suitable measures to remedy or ameliorate the alleged conditions without an increase in the diversion of water from Lake Michigan in violation of the rights of the complainant States as adjudged by this Court.

In order, however, that the Court may be satisfied as to the actual condition of the Illinois Waterway by reason of the introduction of untreated sewage, and as to the actual effect, if any, of that condition upon the health of the inhabitants of the complaining communities, and also with respect to the feasibility of remedial or ameliorating measures available to the State of Illinois without an increase in the diversion of water from Lake Michigan, the Court appoints a Special Master to make a summary inquiry as to such condition, effect and measures, and to report to this Court with all convenient speed.

A true copy.

Test:

Clerk, Supreme Court, U. S.

SUPREME COURT OF THE UNITED STATES.

Nos. 2, 3 and 4, Original.—October Term, 1940.

States of Wisconsin, Minnesota, Ohio and Pennsylvania, Complainants, *vs.* State of Illinois and the Sanitary District of Chicago, et al., Defendants.	No. 2, Original.
State of Michigan, Complainant, *vs.* State of Illinois and the Sanitary District of Chicago, et al., Defendants.	No. 3, Original.
State of New York, Complainant, *vs.* State of Illinois and the Sanitary District of Chicago, et al., Defendants.	No. 4, Original.

[November 25, 1940.]

ORDER.

Upon consideration of the motion of the States of Wisconsin, Minnesota, Ohio, Pennsylvania, Michigan, New York, and Illinois, and in accordance with the following stipulation:

"Whereas, the State of Illinois contends that also during the period intervening between the effective date of the decree and since then substantial amounts of flocculent active sludge and sewage sludge have accumulated in the Brandon Road Pool and that the existence of such accumulation also adds to the menace of the health of the persons living adjacent thereto (which contention is denied by the resopndent Great Lakes States) and,

Whereas, The Special Master in the above captioned causes, the Honorable Monte M. Lemann, before the close of the hearings, suggested that the Attorney General of the State of Illinois and the Attorneys General of the States of Wisconsin, Minnesota, Ohio, Pennsylvania, Michigan and New York (hereinafter referred to as the opposing Great Lakes States) consider the making of an agreement to permit a temporary increase in diversion from 1500 cubic second feet plus domestic pumpage now authorized by the decree of the United States Supreme Court of April 21, 1930, to 10,000 cubic second feet plus domestic pumpage of water from Lake Michigan through the Chicago

Sanitary Canal for one continuous period of ten days so as to scour out the Brandon Road Pool at Joliet, Illinois, and attempt to remove whatever flocculent active sludge and sewage sludge may have accumulated in said pool, and

Whereas, the Special Master suggested that any such agreement between the State of Illinois and the opposing Great Lakes States would be without prejudice to any of the parties to the above captioned causes, and would be solely for the purpose of trying by this means to remove whatever flocculent active sludge deposits and sewage sludge may have accumulated in the Brandon Road Pool by reason of the introduction of untreated sewage and sludge from treated sewage. Nothing in this stipulation shall be construed as an admission by the opposing Great Lakes States as in any manner or form whatsoever waiving, abandoning or prejudicing any of the positions of the opposing Great Lakes States hereinbefore stated or at any time taken in these causes or in the course of the present hearings; and said opposing Great Lakes States hereby affirm and again advance each and every contention and allegation set forth in the return of Wisconsin, Minnesota, Ohio, Pennsylvania, Michigan and New York as respondents to rule to show cause issued on application of the State of Illinois, as Petitioner, for a temporary modification of Paragraph 3 of the Decree of April 21, 1930, filed in this court on February 26, 1940; and said opposing Great Lakes States again deny each and every allegation contained in the Petition of the State of Illinois herein, filed in this court on January 15, 1940, and deny the positions taken during the course of the present hearings by Illinois, and,

Whereas, it is further understood that the State of Illinois does not by reason of this stipulation or motion or test in any manner or form waive, abandon or prejudice any of its positions at any time stated or taken in this proceeding, and the State of Illinois hereby affirms and again advances each and every contention and allegation set forth in its petition, and it is not to be construed as an admission by the State of Illinois that such temporary increase in diversion of water for a period of ten days will either remedy or ameliorate effectively the conditions in Brandon Pool which Illinois contends have constituted the alleged menace to health complained of, and,

Whereas, it is the position of the opposing Great Lakes States that any accumulation of sewage wastes and sludge in the Brandon Road Pool since the decree of the United States Supreme Court went into full operation on December 31, 1938, has not created any nuisance condition either from the standpoint of public health, navigation or in any other way, and that such temporary increase in diversion is in no wise necessary to protect the interests of public health or navigation, and,

Whereas, the opposing Great Lakes States are nevertheless, in a spirit of conciliation and accommodation, willing to enter into

the agreement suggested by the Special Master upon the express condition—(a) that such agreement shall not be construed as in any way waiving, abandoning or prejudicing any of the positions of the opposing Great Lakes States hereinbefore stated or at any time taken in these causes or in the course of the present hearing; (b) that nothing in this stipulation nor the fact of the consent of the opposing Great Lakes States to such temporary expedient shall be construed as an admission or evidence of any claim of the State of Illinois or the Sanitary District of Chicago in the premises and shall not be used as a precedent for any future request for any additional temporary diversion over and above the amounts fixed by the decree of April 21, 1930.

Now, THEREFORE, IT IS STIPULATED AND AGREED by and between the parties to the above captioned causes, by their respective counsel, that a temporary increase in diversion from 1500 cubic second feet plus domestic pumpage now authorized by the United States Supreme Court decree of April 21, 1930, to 10,000 cubic second feet plus domestic pumpage of water from Lake Michigan through the Chicago Sanitary Canal may be authorized for one continuous period of ten days for the purpose of trying to remove whatever flocculent active sludge deposits and sewage sludge may have accumulated in the said Brandon Road Pool. It is understood that a record of said operation will be made and the results thereof incorporated in the record of the hearing.

IT IS FURTHER STIPULATED AND AGREED that any such agreement will be without prejudice to any party to the above captioned causes and that such agreement is not to be used as a precedent for any future request for additional temporary diversion in excess of the amounts fixed by the United States Supreme Court Decree of April 21, 1930.

IT IS FURTHER STIPULATED AND AGREED that a motion in accordance with this stipulation may be filed with the United States Supreme Court and that an order in accordance with the terms of this stipulation may thereupon be entered by said Court without notice to any of said parties.

STATE OF ILLINOIS,

By JOHN E. CASSIDY,
Attorney General of the State of Illinois.

STATES OF WISCONSIN, MINNESOTA, OHIO, PENNSYLVANIA, MICHIGAN and NEW YORK,

By HERBERT H. NAUJOKS,
Special Assistant to Attorneys General.

Dated this 31st day of October, 1940."

It is ordered that the Sanitary District of Chicago be and it hereby is authorized to increase its diversion of water from the Great Lakes-St. Lawrence System or watershed through the Chicago Drainage Canal from 1,500 cubic feet per second in addition to domestic pumpage to 10,000 cubic feet per second in addition to domestic pumpage for one continuous period of ten days from an appropriate hour on December 2, 1940, to the same hour on December 12, 1940, after which period all the provisions of the decree entered April 21, 1930, shall be and remain in full force and effect until further order of this Court.

A true copy.

Test:

Clerk, Supreme Court, U. S.